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Filed : August 25, 2003

REMARKS

Claims 1-10, 14-19, and 22-27 remain pending in the present application, Claims 24 and 25 having been amended. The claims set forth above include marking to show the changes made by way of the present amendment, deletions being in ~~strikeout~~ and additions being underlined.

In response to the Office Action mailed July 28, 2006, Applicant respectfully requests the Examiner to reconsider the above-captioned application in view of the foregoing amendments and the following comments.

Claim 18 Fully Complies With 37 CFR § 1.75(c)

Claim 18 stands rejected under 37 CFR § 1.75(c), the Examiner's position being that Claim 18 does not further limit a previous Claim. Applicant respectfully traverses the present rejection.

With regard to the "driven member", Claim 1 recites, among other recitations, "said driven member being rotatably supported by said crankcase."

Claim 18 further recites "said driven member is disposed within said crankcase." Claim 4, on the other hand, recites "said driven member is supported at first and second ends thereof in said crankcase."

Applicant wishes to note that nothing in Claim 1 requires that the driven member is disposed in the crankcase. Claims 4 and 18 recite different further combinations and arrangements of components. For example, Claim 4 recites that the driven member is supported at first and second ends in the crankcase. Claim 18, on the other hand, does not recite that the driven member is supported at first and second ends.

Thus, Applicant submits that Claim 18 fully satisfies the requirements of 37 CFR § 1.74(c).

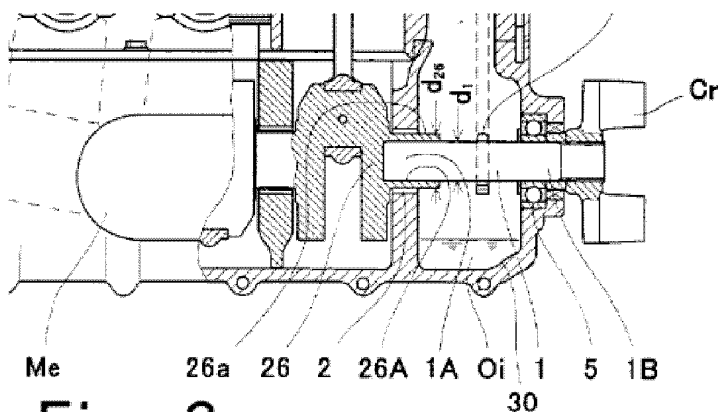
Claims 24 and 25 Fully Satisfy The Requirements of 35 U.S.C. § 112

Claims 24 and 25 stand rejected under 35 U.S.C. § 112, second paragraph, for being dependent from a canceled Claim. In response, Applicant has amended Claims 24 and 25 to depend from Claim 10, into which Claim 11 had been previously incorporated. Thus, the present rejection is now moot.

Additionally, Applicant would like to note that no changes have been made to the scope of Claims 24 or 25. Thus, all of the equivalents of the recitations of the previous versions of Claims 24 and 25 are also equivalents of the present recitations of Claim 24 and 35, respectively.

Matsuda et al. Does Not Anticipate Claims 1, 4-7, 10, 15, 18, 19, 23-25, or 27

Claims 1, 4-7, 10, 15, 18, 19, 23-25, or 27 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Matsuda et al '089. Applicant respectfully traverses the present rejection.



Matsuda et al. is directed to a camshaft drive train for the engine of a personal watercraft. The crankshaft 26 of Matsuda et al. includes a **mounting hole 26A** for receiving the extended shaft 1. Matsuda et al. paragraph no. [0049], line 1. The illustration of Figure 3 (a portion of which is reproduced adjacently hereto),

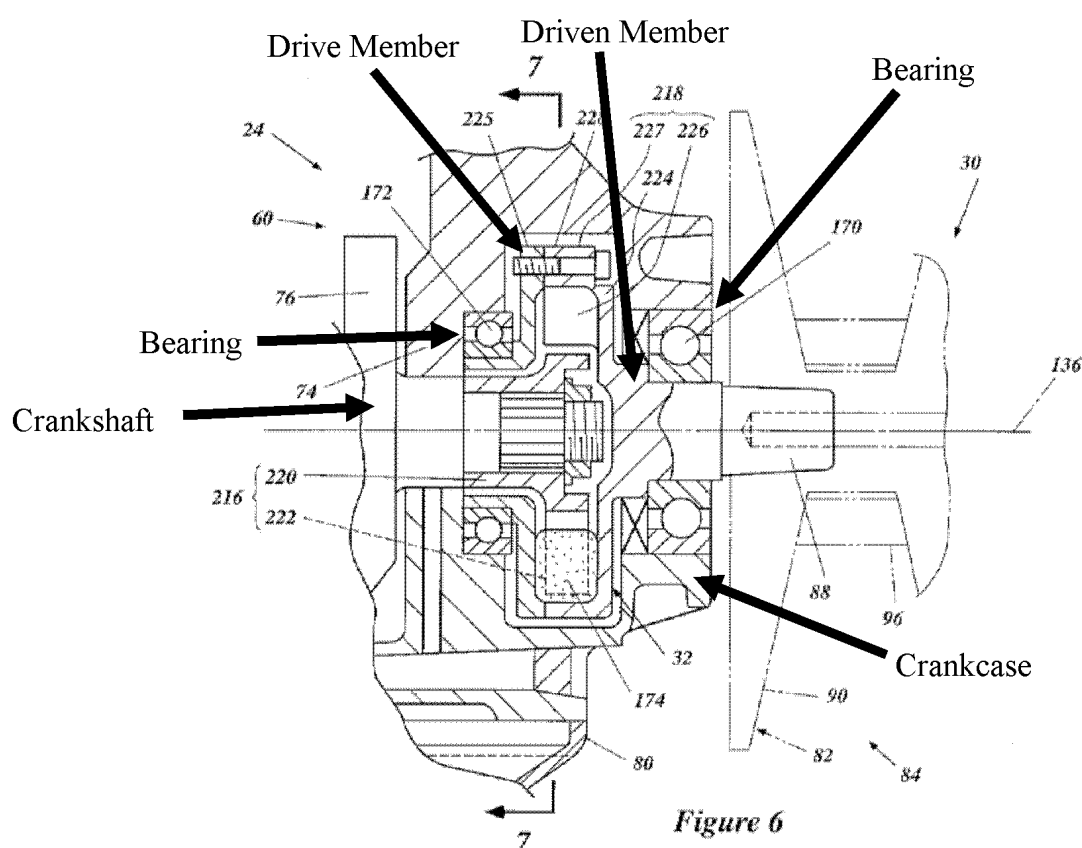
shows that the **mounting hole 26A** is formed in the end of the crankshaft 26. Additionally, the material surrounding the hole 26A is monolithic with the remainder of the material forming the crankshaft.

As such, Applicant submits that the **mounting hole 26A** cannot be considered as a “drive member coupled with the crankshaft.” Rather, Applicant submits that a fair reading of the Matsuda et al. reference would be that the “extended shaft 1” could be considered as a “drive member coupled with the crankshaft.” Using this interpretation, the Matsuda et al. reference fails to teach a “**driven** member supported by the crankcase.”

In contrast, Claim 1 recites, among other recitations, “said coupling system comprising a drive member and a driven member, said drive member being located along said first axis and being coupled with said crankshaft, said driven member being located along said first axis and being coupled with said transmission, said driven member being rotatably supported by said crankcase, and said drive member being coupled with said driven member, wherein the drive member is permanently meshed with the driven member and are configured to always rotate at the same speed.”

Similarly, Claim 10 recites, among other recitations, “coupling means for coupling said engine with said transmission within said crankcase; wherein said coupling means comprises a driven member rotatably supported by said crankcase and a drive member, wherein the drive member is permanently meshed with the driven member such that the drive member and the driven member always rotate at the same speed.”

A non-limiting embodiment of such arrangements is illustrated in Figure 6 of the present Application, a portion of which has been reproduced below.



As shown in Figure 6, the “drive member 216” is connected to the crankshaft 76. However, the “driven member 218” is rotatably supported by the crankcase, via the bearings 170. This arrangement provides the further advantage described at paragraph [0076] of the present application, as follows:

[0076] As such, the input shaft 88 is **not supported only by the crankshaft. Rather, the input shaft 88 is rotatably supported by the crankcase 74.** Thus, the bending loads applied to the input shaft through the interaction of the drive belt 96 and the drive pulley 90 are not transferred to the

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crankshaft 76. Rather, such bending loads are imparted to the bearings 170, 172. Additionally, because the drive member 216 is coupled with the driven member 218 within the crankcase 74, the coupling device 32 is protected from the environment in which the snowmobile 20 is operated.

Present Application, page 13, paragraph no. [0076] (emphasis added).

Thus, Applicant submits that Claims 1 and 10 clearly and non-obviously define over the Matsuda et al. reference. Additionally, Applicant submits that Claims 4-7, 10, 15, 18, 19, 23-25, or 27 also define over the Shichinohe reference, not only because they depend from one of Claims 1 or 10, but also on their own merit.

Matsuda et al. Does Not Make Claims 22 and 26 Obvious

Claims 22 and 26 stand rejected under 35 U.S.C. § 103(a) as being obvious of Matsuda et al. Applicant respectfully traverses the present rejection.

Matsuda et al, discussed above, discloses that the connection between the extended shaft 1 and the **mounting hole 26A** of the crankshaft 26 is **splined**. In this arrangement, the splines on the **mounting hole 26A** extend radially inwardly, and the splines on the extended shaft 1 extend radially outwardly. It was the Examiner's position that it would have been obvious to one of ordinary skill in the art to reverse the arrangement of these components so that the splines on the crankshaft extend radially outwardly and the splines on the extended shaft extend radially inwardly. It was also the Examiner's position that such a reversal of parts is merely an obvious variation that would be only a matter of design choice that would work "equally as well." Office Action dated July 28, 2006, page 4, second full paragraph.

Firstly, Applicant would like to note that this reversal of parts would be contrary to the disclosure of the Matsuda et al. reference. More specifically, the Matsuda et al. reference teaches away from such a reversal of parts.

Applicant would like to note that it long been established that references cannot be combined where the reference teaches away from their combination. For example, MPEP § 2145 ¶ X indicates that it "is improper to combine references where the references teach away from their combination."

The Matsuda et al. reference indicates that using an extended shaft that has a smaller diameter than the crankshaft is an object of the invention of Matsuda et al. For example, the Summary of the Invention of Matsuda et al. specifically indicates:

In the above structure, since the crankshaft-side sprocket for driving the camshaft is provided on the **extended shaft having the small diameter**, the diameter of the crankshaft-side sprocket and hence the diameter of the corresponding camshaft-side sprocket can be reduced. **Therefore, the cylinder head can be compactly configured.** Even when it becomes necessary to increase the diameter of the crankshaft in order to obtain the high power in the engine, the **size of the camshaft-side sprocket need not be increased, and consequently, the size of the entire engine is not increased.** In this case, a diameter of a portion of the extended shaft, which is located on the opposite side of the crankshaft with respect to the crankshaft-side sprocket, is not necessarily small.

Matsuda et al. paragraph no. [0013], (emphasis added).

If the portions of the crankshaft 26 and the extended shaft 1 of Matsuda et al. were to be reconfigured as suggested by the Examiner, the extended shaft would have a diameter larger than that of the end of the crankshaft, which is contrary to the express teaching of the Matsuda et al. reference noted above in paragraph [0013]. Thus, Applicant submits that one of ordinary skill in the art would not find motivation for reversing the components as suggested by the Examiner.

Aside from the Examiner's proposed reversal of parts, Applicant also notes that Matsuda et al. also fails to teach the crankshaft, drive member, driven member arrangement recited in Claims 22 and 26.

In particular, Claim 22 recites, among other recitations, "a drive member and a driven member, said drive member being located along said first axis and being coupled with said crankshaft, said driven member being located along said first axis and being coupled with said transmission, said driven member being rotatably supported by said crankcase, and said drive member being coupled with said driven member."

Similarly, Claim 26 recites, among other recitations, "means for coupling said engine with said transmission within said crankcase; wherein said coupling means comprises a driven member rotatably supported by said crankcase and a drive member."

As noted above with reference to the reproduced portion of Figure 3 of the Matsuda et al. reference, Matsuda et al. fails to teach the crankshaft, drive member, driven member recited in Claims 22 and 26. Rather, Matsuda et al. merely teaches a crankshaft having a hole (26A) and an

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extended shaft (1) splined into the hole (26A). As such, Matsuda et al. only teaches a coupling device or coupling means with 2 parts; a crankshaft and another shaft supported by the crankcase. Thus, Matsuda et al. fails to teach the three component system having a crankshaft, drive member and driven member recited in Claims 22 and 26.

Applicant thus submits that Claims 22 and 26 clearly and non-obviously define over the Matsuda et al. reference.

The Proposed Combination of Shaw/Matsuda et al Does Not Make Claims 1, 4-10, 15-19, and 22-27 Obvious

Claims 1, 4-10, 15-19, and 22-27 stand rejected under 35 U.S.C. § 103 (a) as being obvious over Shaw '275 in view of Matsuda et al. Applicant respectfully traverses the present rejection.

As noted above with regard to the outstanding rejection of Claims 1 and 10 as being anticipated by Matsuda et al. and the outstanding rejection of Claims 22 and 26 as being obvious in light of Matsuda et al., it is Applicant's position that the Matsuda et al. reference fails to teach the crankshaft-drive member-driven member arrangement recited in these claims.

The Shaw reference does not in any way rectify this failure of the Matsuda et al. reference. Rather, Shaw is only cited in the outstanding Office Action as teaching the typical components of a snow mobile. The Office Action also includes the admission that Shaw fails to teach an "engine crankshaft extending along a fist axis mounted in a crankcase with a coupling system having a drive member coupled with the crankshaft and permanently meshed with a driven member."

As noted above, Matsuda et al. also fails to teach such a configuration. Thus, Applicant submits that Claims 1, 10, 22, and 26 clearly and non-obviously define over the cited references. Additionally, Applicant submits that Claims 4-9, 15-19, and 27 also define over the cited references, not only because they depend from one of Claims 1 or 10, but also on their own merit.

The Proposed Combination of Shaw/Matsuda et al/Barthruff Does Not Make Claims 2, 3, or 14 Obvious

Claims 2, 3, and 14 stand rejected under 35 U.S.C. § 103 (a) as being obvious over Shaw '275 in view of Matsuda et al. and Barthruff. Applicant respectfully traverses the present rejection.

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As noted above, Applicant submits that Claims 1 and 10 clearly and non-obviously define over the cited references. Accordingly, Applicant also submits that Claims 2, 3, and 14 also define over the cited references, not only because they depend from one of Claims 1 and 10, but also on their own merit.

CONCLUSION

For the reasons presented above, Applicant respectfully submits that this application, as amended, is in condition for allowance. If there is any further hindrance to allowance of the pending claims, Applicant invites the Examiner to contact the undersigned.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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